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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/762,736	01/21/2004	Jani Lainema	297-009168-US (C01)	5610

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FAIRFIELD, CT 06824

EXAMINER

WONG, ALLEN C

ART UNIT	PAPER NUMBER
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2621

DATE MAILED: 06/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/762,736

Applicant(s)

LAINEMA ET AL.

Examiner

Allen Wong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Double Patenting

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

1. Claims 1 and 15 are rejected on the ground of nonstatutory double patenting over claims 1 and 16 of U. S. Patent No. 6,738,423 since the claims, if allowed, would improperly extend the "right to exclude" already granted in the patent.

The subject matter claimed in the instant application is fully disclosed in the patent and is covered by the patent since the patent and the application are claiming common subject matter, as follows: Claim 1 of the present application and claim 1 of U. S. Patent No. 6,738,423 are virtually similar to one another in that both are encoding methods with limitations of "estimating the motion picture...", "modeling the motion of picture elements...", "defining a set of quantizers...", "selecting... motion coefficient

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quantizer...", and "quantizing the motion coefficients..." Further, claim 15 of the present application and claim 16 of U. S. Patent No. 6,738,423 are virtually similar to one another in that both are decoding methods for performing the "receiving quantized motion coefficients...", "defining a set of inverse quantizers...", "performing inverse quantization...", etc.

Furthermore, there is no apparent reason why applicant was prevented from presenting claims corresponding to those of the instant application during prosecution of the application which matured into a patent. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-2 and 5-14 are rejected under 35 U.S.C. 102(e) as being anticipated by Bist (6,249,546).

Regarding claim 1, Bist discloses a method for encoding video information, comprising the following steps of:

estimating the motion of picture elements between a piece of reference video information and a piece of current video information (col.2, ln.17-21; note interblock

coding is discussed, where the block of a current video frame and a reference video frame is motion estimated and compensated);

modeling the motion of picture elements using a certain set of basis functions and certain motion coefficients (col.7, ln.45, col.8, ln.37 and col.11, ln.10 disclose a set of basis functions and DCT coefficients or motion coefficients);

defining a certain set of quantizers (col.6, ln.17-20; Bist discloses there is a set of quantizers R_0-R_n);

selecting, based on a certain predetermined selection of criterion, a motion coefficient quantizer from the set of quantizers (col.5, ln.63 to col.6, ln.16; Bist discloses the selection of a quantizer from a set of quantizers R_0-R_n); and

quantizing the motion coefficients using the selected motion coefficient quantizer (col.5, ln.63 to col.6, ln.16; note data is then quantized after selection of quantizer from a set of quantizers R_0-R_n).

Regarding claim 2, Bist discloses the selection criterion is the value of a certain encoding parameter (col.6, ln.19-20).

Regarding claims 5-6, Bist discloses the use of target bit quality and amount of information used (col.8, ln.3-47).

Regarding claims 7-10, Bist discloses using orthogonal basis functions (col.2, ln.17-21; note Bist discloses DCT).

Regarding claims 11-12, Bist discloses the motion coefficient quantizer is specified and received (col.5, ln.63 to col.6, ln.16; Bist discloses the selection of a quantizer from a set of quantizers R_0-R_n , wherein col.6, ln.17-20, Bist discloses there is

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a set of quantizers R_0 - R_n to select from and after selection is made, the choice of quantizer is sent and received).

Regarding claims 13-14, Bist discloses set of quantizers with quantization intervals (col.6, ln.17 to col.7, ln.8).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bist (6,249,546) in view of Yu (6,256,347).

Bist discloses determining a selected motion coefficient quantizer (col.5, ln.63 to col.6, ln.16; Bist discloses the selection of a quantizer from a set of quantizers R_0 - R_n), determining motion of the picture elements (col.2, ln.17-21; note interblock coding is discussed, where the block of a current video frame and a reference video frame is motion estimated and compensated), determining a piece of prediction video information (col.2, ln.17-21; note interblock coding is discussed, where the block of a current video frame and a reference video frame is motion estimated and compensated, and a motion vector is determined to represent a piece of prediction video information), determining a piece of prediction error video information (col.2, ln.17-21; note interblock coding is discussed, where the block of a current video frame and a reference video frame is motion estimated and compensated, and a motion vector is determined to

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represent a piece of prediction error video information), coding the piece of prediction error video information (col.2, ln.21, note VLC is used to code video information), quantizing the prediction error coefficients (col.5, ln.63 to col.6, ln.16; note data is then quantized after selection of quantizer from a set of quantizers R_0 - R_n) and selecting the motion coefficient quantizer (col.5, ln.63 to col.6, ln.16; Bist discloses the selection of a quantizer from a set of quantizers R_0 - R_n).

Bist does not specifically disclose the use of a set of inverse quantizers, inverse quantization. However, Yu teaches the use of inverse quantization (fig.10, element 64). The use of inverse quantization is an obvious modification for one of ordinary skilled to perform the opposite of quantization so as to appropriately decode image data. Also, since Bist teaches the use of a set of quantizers (col.6, ln.17-20; Bist discloses there is a set of quantizers R_0 - R_n). Therefore, it would have been obvious to one of ordinary skill in the art to Bist and Yu to form a set of inverse quantizers since a teaching for utilizing a set of quantizers exist so as to accurately, efficiently, robustly decode image data, to minimize hardware requirements, and to save costs (Yu col.2, ln.38-46).

6. Claims 15-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yu (6,256,347) in view of Bist (6,249,546).

Regarding claim 15, Yu discloses a method for decoding encoded video information, comprising the following steps of:

receiving quantized motion coefficients describing motion of picture elements (fig.1, element 26);

performing inverse quantization of the quantized motion coefficients using an inverse quantizer (fig.10, element 64);

determining the motion of the picture elements using the inverse quantized motion coefficients and certain basis functions (fig.10, note element 62 then sends motion vectors and motion of picture elements to the adder 68, where the motion compensated motion vector data is and the inversely quantized, with quantization step size control, and inversely discrete cosine transformed motion data is added at element 68); and

determining a piece of prediction video information using a piece of reference video information and the determined motion of the picture elements (fig.10, note element 62 then sends motion vectors and motion of picture elements to the adder 68, where the motion compensated motion vector data is and the inversely quantized, with quantization step size control, and inversely discrete cosine transformed motion data is added at element 68).

Yu does not specifically disclose the determining of a selected motion coefficient quantizer using which the motion coefficients are quantized and defining a set of inverse quantizers. However, Bist teaches determining of a selected motion coefficient quantizer using which the motion coefficients are quantized (col.5, ln.63 to col.6, ln.16; Bist discloses the selection of a quantizer from a set of quantizers R_0 - R_n). Bist also teaches the defining of a set of quantizers (col.6, ln.17-20; Bist discloses there is a set of quantizers R_0 - R_n). Therefore, it would have been obvious to one of ordinary skill in the art to modify the Yu's teachings into Bist to formulate a set of inverse quantizers

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since a teaching for utilizing a set of quantizers exist so as to accurately, efficiently, precise decode image data in a clear, robust manner (Bist col.4, ln.42-50).

Note claims 16-20 have similar corresponding elements.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allen Wong whose telephone number is (571) 272-7341. The examiner can normally be reached on Mondays to Thursdays from 8am-6pm Flextime.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James J. Groody can be reached on (571) 272-7418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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A handwritten signature in black ink, appearing to read 'Allen Wong', with a long, sweeping horizontal stroke extending to the right.

Allen Wong
Primary Examiner
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AW
6/12/06